

ABSTRACT

2 A thin discontinuous layer of metal such as Au, Pt, or Au/Pd is
3 deposited on a silicon surface. The surface is then etched in a solution including
4 HF and an oxidant for a brief period, as little as a couple seconds to one hour. A
5 preferred oxidant is H₂O₂. Morphology and light emitting properties of porous
6 silicon can be selectively controlled as a function of the type of metal deposited, Si
7 doping type, silicon doping level, and/or etch time. Electrical assistance is
8 unnecessary during the chemical etching of the invention, which may be
9 conducted in the presence or absence of illumination.

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